ANNUAL INDEX 1968

Power Engineering

TECHNICAL PUBLISHING COMPANY, BARRINGTON, ILL.

Power Engineering

SUBJECT INDEX

Note that some of the articles are cross-referenced in order to give the total scope of power field coverage represented.

COMPRESSORS

Peaking Power With Air ..... Jan 50
Compressed Air for Power Plants
Part 1 ..... Apr 41
Part 2 ..... May 51
Part 3 ..... July 50
Part 4 ..... Aug 50

DIESELS

Nuclear Plant Emergency Power .. Feb 62
Big Diesels for Power Plants ..... Mar 38
Diesel Units for Nuclear Plants .... Nov 82

ELECTRICAL CONVERSION

Reclamation's Mead Substation .... Jan 32
Easy-to-Draw Nomograph ..... Apr 64
First 765-kv Transformer ..... May 38
Transformer Facility of Tomorrow ..... May 81
Transformers by the Acre ..... Aug 86
Edmonston Pumping Plant
Part 1 ..... Sept 54
Part 2 ..... Oct 64
Relay Circuit Current Mismatch .. Oct 48
Added Space for Building More, and Larger, Transformers ..... Nov 106

ELECTRICAL DISTRIBUTION

Penelec Goes to H.V. Distribution .. Feb 40
Short Circuit Power Factor ..... Apr 62
New Dielectric for Power Capacitors ..... May 93
Mechanized Line Maintenance ..... June 37
System Design for Motor Starting
Part 1 ..... July 34
Part 2 ..... Aug 44
Why Aerial Spacer Cable? ..... Aug 30
Dielectric Test Probe ..... Aug 33
Film Features New URD Methods .. Aug 91
Utility Plant Electric Systems ..... Sept 42
Edmonston Pumping Plant
Part 1 ..... Sept 54
Part 2 ..... Oct 64

ELECTRICAL TRANSMISSION

Reclamation's Mead Substation .. Jan 32
Texas P&L Looks at Load-Shedding Mar 41
NW-SW Intertie in Oregon ..... Apr 58
Ground Electrode for HVDC Line .. May 40
MAPP's Coordination Center ..... June 30
800-kv D-C Transmission
Part 1 ..... June 50
Part 2 ..... July 46
New Electric Reliability Council .... Aug 53
Self-Damping Conductor Increases System Reliability ..... Aug 91
Power from the North Via HVDC .. Oct 38
Utility Plans Florida's First 500-kv Line ..... Oct 91
Transmission Systems Present Standards and Future Designs .. S-2
Transmission Planning S-6
Conductors, Groundwire and Counterpoise S-7
Insulators, Hardware and Cross-arms S-9
Single Pole and Two Pole Structures S-13
Tower Structures S-19
List of Principal Transmission Line Suppliers 69
Creep and Sag Control ..... Dec 31
Thyristors for HVDC—How Soon? .. Dec 38
UHV Research for the Future ..... Dec 55

ELECTRICAL UTILIZATION

Electric Furnace Is In—Open Hearth Is Out ..... Feb 84
Light Watchman ..... Apr 55
Look Again at Motor Overloads
Part 1 ..... Apr 56
Part 2 ..... May 64
System Design for Motor Starting
Part 1 ..... July 34
Part 2 ..... Aug 44
Parallel Pump Operation ..... Aug 34
System Design for Motor Starting Aug 44
Coping With Noise from Big Motors ..... Oct 54

FUELS AND ASH HANDLING

Sulfur and Air Heater Corrosion .. Jan 40
Special Boilers for Waste Fuels .... Feb 42
Fuel Cells Being Developed for Broad Consumer Use ..... Feb 84
Mitchell Plant's 1200-ft Chimney .. Apr 51
Profit by Sintering Your Flyash .... Apr 52
Wearproof With Carbide Linings .. July 42
Boiler for Bark-Burning ..... Sept 52
Sulfur Oxides: Control at Last? .... Nov 76
Market Survey of Air Pollution Control Equipment ..... Nov 95
Selecting Precipitators ..... Dec 26

GAS TURBINES

Industrial On-Site Generation ..... May 54
Gas Turbines Accelerate Growth .. May 66
Two New Gas Turbines Introduced May 79
Electronic Brain for Gas Turbines May 80
Utility-Owned Total-Energy Plant .. July 28
Floating Power Plant for Missile Tests ..... July 88

HYDRO POWER

Corrosion-Resistant Construction .. Jan 56
Penstock Cleaning ..... Feb 38
600-Mw Units for Grand Coulee .... May 58
New Vistas in Hydro Research ..... July 42
Worldwide Pumped-Storage Projects ..... Oct 58
Trash Rack Rake Cuts Downtime .. Nov 75
New Units for Rocky Reach ..... Nov 81

INSTRUMENTS, COMPUTERS AND CONTROLS

Once-Through Boiler Control .....
Part 1 ..... Jan 36
Part 2 ..... Feb 58
Nuclear Plant Protective Systems
Part 1 ..... Feb 45
Part 2 ..... Mar 64
Vibration—Detect and Control It .. Feb 54
Once-Through Boiler Control ..... Feb 58
Special TV Viewer in a Furnace .... Mar 45
Turbine Startup Automation ..... Mar 52
Hardware Behind a Computer ..... Mar 71
New Flame Detector Is Sensitive to Frequency ..... Mar 99
Automated Stream Analysis ..... Apr 45
Short Circuit Power Factor ..... Apr 62
Automated Burner Controls
Part 1 ..... May 43
Part 2 ..... June 38
Electronic Brain for Gas Turbines May 80
Instant Display of Present Conditions ..... July 89
Dielectric Test Probe ..... Aug 33
CCTV for Modern Power Plants .... Sept 49
Utility Growth and Reliability ..... Sept 58
Relay Circuit Current Mismatch .... Oct 48
Automating Plant Startup ..... Dec 42

MAINTENANCE AND CONSTRUCTION

Sulfur and Air Heater Corrosion .. Jan 40
Corrosion-Resistant Construction .. Jan 56
Penstock Cleaning ..... Feb 38
Vibration—Detect and Control It .. Feb 54
Mechanized Line Maintenance ..... June 37
Wearproof With Carbide Linings .... July 42
Certified Quality Service Introduced ..... July 83
Industrial Power Maintenance ..... Sept 62
Powered Platforms Cut Downtime Oct 67

Trash Rack Rake Cuts Downtime .. Nov 75
Centrifuges for Power Plants ..... Dec 34

MANAGEMENT

Staffing Nuclear Plants ..... Jan 47
Utility Rate Structures ..... Jan 53
Should You Buy Power, or Make It? Jan 59
Electrical Manufacturers Expect Record Shipments in 1967-68 .... Feb 84
Fuel Cells Being Developed for Broad Consumer Use ..... Feb 84
New Electric Generating Plants in the Pacific Northwest Will Be Mostly Thermal ..... Feb 96
Texas P&L Looks at Load-Shedding Mar 41
U.S. Produced 36% of Total World Power Output in 1965 ..... Mar 101
Light Watchman ..... Apr 55
Stainless Tubes Exclusively ..... May 47
Mobile Boilers Delivered Within Hours of Order ..... May 77
Management Consulting Service .. May 78
MAPP's Coordination Center ..... June 30
Power Equipment—Who Needs What? ..... June 42
How To Buy a Reactor ..... June 47
The Procurement Facts of Life ..... June 54
Bechtel's 70th Birthday ..... June 57
Utility-Owned Total-Energy Plant .. July 28
Nuclear Plant Training ..... July 38
The Power Industry Looks Ahead .. July 56
Used Equipment Saves Time, Money ..... Aug 42
Balance Your Safety Program ..... Aug 47
New Electric Reliability Council .... Aug 53
Utility Growth and Reliability ..... Sept 58
Training T&D Draftsmen ..... Oct 41
Market Survey of Air Pollution Control Equipment ..... Nov 95
GE Builds Midwest Fuel Recovery Plant ..... Nov 97
Added Space for Building More, and Larger, Transformers ..... Nov 106
UHV Research for the Future ..... Dec 55

MEETINGS AND CONVENTIONS

Nuclear Industry Looks Good ..... Jan 61
ASME Winter Annual Meeting ..... Feb 66
American Power Conference ..... Apr 65
Con Ed Looks to HVDC ..... Apr 67
Gas Turbines Accelerate Growth .. May 66
Power Equipment—Who Needs What? ..... June 42
The Procurement Facts of Life ..... June 54
S. E. Electric Exchange Conference June 58
Pollution Control Conference ..... July 54
The Power Industry Looks Ahead .. July 56
Public Power Speaks Out ..... Aug 54
Utilities—1985 ..... Aug 56
IEEE '68 Summer Power Meeting .. Sept 68
Nuclear Fuel—Costly but Adequate Sept 70
Energy Resources Unlimited ..... Dec 50
Joint Power Generation Conference Dec 53

NUCLEAR POWER

Reactor Core Thermal Performance Jan 44
Staffing Nuclear Plants ..... Jan 47
Nuclear Power for Industry ..... Jan 63
Nuclear Plant Protective Systems
Part 1 ..... Feb 45
Part 2 ..... Mar 64
Nuclear Plant Emergency Power .. Feb 62
Boiling Heavy Water Reactor ..... Mar 56
San Onofre Startup ..... Apr 38
Integrated Emergency Power Supply for Nuclear Plants
Part 1 ..... May 48
Part 2 ..... June 34
Part 3 ..... Aug 39
How To Buy a Reactor ..... June 47
Nuclear Plant Training ..... July 38
Welded Tubes for Fuel Assemblies July 44
Toward Nuclear Self-Support ..... Aug 28
Steel Containment Advantages ..... Aug 48
Nuclear Fuel Management ..... Sept 46
Nuclear Plant Steam Generators .. Oct 44
Heavy Water Reactor Will Boil ..... Nov 78
Diesel Units for Nuclear Plants .... Nov 82
GE Builds Midwest Fuel Recovery Plant ..... Nov 97
Nuclear Power for Large Industry Dec 46

PIPING AND VALVES

Piping Expansion Devices
Part 3 ..... Feb 49
Part 4 ..... Mar 60
Part 5 ..... May 60
A Trend to Large Butterfly Valves Sept 65

PLANT DESCRIPTIONS

Peaking Power With Air ..... Jan 50
Should You Buy Power, or Make It? Jan 59
Underground Steam Plant ..... Feb 52
Integrated Emergency Power Supply for Nuclear Plants
Part 1 ..... May 48
Part 2 ..... June 34
Part 3 ..... Aug 39
Industrial On-Site Generation ..... May 54
Utility-Owned Total-Energy Plant July 28
Post Office Uses Total-Energy Power ..... Nov 107
Utility Supplies Steam and Power Dec 45

STEAM GENERATION

Once-Through Boiler Control
Part 1 ..... Jan 36
Part 2 ..... Feb 58
Special Boilers for Waste Fuels .... Feb 42
Special TV Viewer in a Furnace .. Mar 45
Care of Feedwater Heaters ..... Apr 48
Mobile Boilers Delivered Within Hours of Order ..... May 77
Shop-Assembled Boilers ..... July 32
Parallel Pump Operation ..... Aug 34
Boiler for Bark-Burning ..... Sept 52
Nuclear Plant Steam Generators .. Oct 44
Powered Platforms Cut Downtime Oct 67
Selecting Precipitators ..... Dec 26

STEAM TURBINES

Turbine Startup Automation ..... Mar 52
Utility Growth and Reliability ..... Sept 58
Centrifuges for Power Plants ..... Dec 34

WATER TREATMENT AND MANAGEMENT

Universal Design for Desalting ..... Jan 42
Mixed-Bed Condensate Polishing .. Mar 48
Desalting 7.5 Mgd at Tijuana ..... Mar 58
Automated Stream Analysis ..... Apr 45
Water Use and Thermal Pollution June 44
Stratified Bed Demineralizer ..... Aug 36
Tough Resins Don't Need Filters .. Oct. 50
Edmonston Pumping Plant
Part 1 ..... Sept 54
Part 2 ..... Oct 64
New Plant for New-Type Water Desalination ..... Oct 98

If you would like a copy of any article appearing in the Annual Index, send your request to the Editor, POWER ENGINEERING, 1301 South Grove Ave., Barrington, Illinois 60010

Power Engineering

INDEX OF AUTHORS—1968

A

Annestrand, S. A.—Bonneville Power Administration June/50; July/46

B

Barney, Anthony—Commonwealth Associates, Inc. Sept/42
Beagle, M. J.—Aqua-Chem, Inc. Mar/58
Benkusky, A. W.—Midcontinent Area Power Planners June/30
Bennett, N. B. Jr.—Bureau of Reclamation Jan/32
Berry, Lincoln H.—Public Service Co. of New Hampshire Nov/75
Bigge, W. B.—General Electric Co. Dec/46
Boksjo, Ingvar—ASEA Dec/38
Brandt, T. F. Jr.—I-T-E Circuit Breaker Co. Apr/62
Brown, F. X.—Westinghouse Electric Corp. Apr/48
Burt, L. S.—Public Service Co. of Colorado Mar/45
Byerley, W. M.—Westinghouse Electric Corp. Oct/44

C

Casas, D.—Halliburton Co. Feb/38
Casey, Suzanne R.—Commonwealth Edison Co. Sept/46
Catanzaro, E. W.—Technicon Research Laboratories Apr/45
Cook, Gordon A.—Iowa Electric Light & Power Co. Aug/30
Corcoran, R. W.—Pioneer Service & Engineering Co. Aug/48
Council, M. E.—Louisiana State University Jan/50
Coxon, Peter—Lytag Ltd. Apr/52
Crits, G. J.—Cochrane Div., Crane Co. Mar/48

D

Davidson, James E.—Pennsylvania Electric Co. Feb/40
Dean, R. A.—Westinghouse Electric Corp. Jan/44
Di Luzio, Frank C.—Edgerton, Germeshausen & Grier and Reynolds Electrical & Engineering Co., Inc. June/44
Dunsmore, Chester L. May/48; June/34; Aug/39
Durrant, Oliver W.—The Babcock & Wilcox Co. May/43; June/38
Dziedzic, Edward—Kaiser Aluminum & Chemical Sales, Inc. Dec/31

E

Engle, J. P.—Halliburton Co. Feb/38
Epstein, Jerome P.—Perry Equipment Corp. Aug/42

F

Ferrell, W. H.—Union Electric Co. Oct/41
Finney, J. A.—UOP Air Correction Div., Universal Oil Products Co. Dec/26
Fletcher, R. H.—Texas A&M University Aug/34
Fogarty, David J.—Southern California Edison Co. Apr/38
Frey, A.—Westinghouse Electric Corp. Mar/52
Fulford, P. J.—Purdue University Sept/46

G

Galloway, Edward E.—Cincinnati Gas & Electric Co. Aug/36
Gartman, Warren W.—Gilbert Associates, Inc. June/47
Gilbert, Paul H.—Dept. of Water Resources, State of California Jan/56
Golze, Alfred R.—Dept. of Water Resources, State of California Sept/54; Oct/64
Grady, D. R.—Technicon Research Laboratories Apr/45
Green, Bobby L.—Air Preheater Co. ..Sept/52
Gunwaldsen, Ralph W.—Stone & Webster Engineering Corp. Nov/81
Guppy, W. H.—Commonwealth Edison Co. July/38

H

Harrington, E. J.—Bonneville Power Administration June/50; July/46
Harsevoort, R. J.—Wisconsin Electric Power Co. Mar/52
Hatcher, Ted. L.—Texas Power & Light Co. Mar/41
Hetherington, Richard—Rohm and Haas Oct/50
Ho, Timothy T.—Kaiser Engineers July/34; Aug/44
Hoffmeier, P. C.—Cincinnati Gas & Electric Co. Aug/36

J

Johnson, G. Dugan—Allis-Chalmers Mfg. Co. Oct/58
Jones, Charles F.—NUS Corp. Jan/47

K

Kaestle, F. L.—General Electric Co. Dec/46
Kenny, P. L.—Bailey Meter Co. Jan/36; Feb/58
Klipec, Bruce E.—Samuel Moore & Co. Mar/71
Koehler, A. C.—Pioneer Service & Engineering Co. Aug/48
Kramer, Andrew W.—Consulting Editor, Power Engineering Dec/50

L

Leppke, D. M.—Pioneer Service & Engineering Co. Aug/48
Lindsay, W. T. Jr.—Westinghouse Electric Corp. Apr/48

M

MacGregor, G.—Atomic Energy of Canada, Ltd. Oct/38
Marjerrison, M. N.—Bonneville Power Administration June/50; July/46
Marsh, W. D.—General Electric Co. Dec/46
Martensson, Heine—ASEA Dec/38
Martin, David M.—Iowa Electric Light & Power Co. Aug/30
Martinez, J. D.—Louisiana State University Jan/50
Masche, G. C.—General Electric Co. ..July/38
Miller, W. A.—Bechtel Corp. Dec/42
Minges, Richard J.—Diamond National Corp. Jan/59

N

Nailen, R. L.—The Louis Allis Co. Apr/56; May/64; Oct/54
Nathan, A.—Sargent & Lundy Feb/45; Mar/64

O

Ochs, H. T. Jr.—Jackson & Moreland ..Jan/53
Olds, F. C.—Associate Editor, Power Engineering Nov/76
Ortega, Orlando J.—Southern California Edison Co. Apr/38

P

Pittman, F.—Halliburton Co. Feb/38
Plumb, Cecil—Inland Steel Co. Sept/62

R

Ranney, Bruce F.—Henry Pratt Co. ..Sept/65
Ricci, Francis R.—Gilbert Associates, Inc. Feb/54
Riley, Daniel I.—Sverdrup & Parcel and Associates Apr/58
Risney, Robert—Iowa Southern Utilities Co. Aug/47
Robinson, Harold S.—Westinghouse Electric Corp. July/34; Aug/44
Roche, John B.—Kaiser Aluminum & Chemical Sales, Inc. Dec/31
Roddy, Charles P.—Dept of Electric & Water Utilities, Lakeland, Fla. Jan/40
Roe, Kenneth A.—Burns & Roe, Inc. ..Jan/42

S

Saar, Robert P.—Henry Pratt Co. Sept/65
Salmon, Benjamin T.—The Carpenter Steel Co. July/44
Selmeczy, J. G.—Westinghouse Electric Corp. Mar/52
Skiff, W. N.—Northern States Power Co. Sept/58
Sommerfield, Earle M.—Consulting Editor, Power Engineering Feb/49; Mar/60; Apr/41; May/51; May/60; July/50; Aug/50
Steinbruchel, Armando A.—Aqua-Chem, Inc. Mar/58
Stephens, J. P.—Mississippi Power Co. July/28
Stevens, M. H.—Pennsalt Chemicals Corp. Dec/34
Stevens, R. F.—Bonneville Power Administration June/50; July/46
Swanson, Richard—Arthur Andersen & Co. Sept/46
Swengel, F. M.—Stanley Consultants, Inc. Mar/38

T

Trainor, J. W.—The Rust Engineering Co. Feb/42
Tully, J. P.—Combustion Engineering Inc. July/32

W

Waugh, Carleton L.—Bonneville Power Administration May/40
Weinert, George—West Penn Power Co. July/42
Wheeler, J. W.—Diamond Power Specialty Corp. Sept/49
Whitehead, L. E.—The DuPage Laboratories Apr/64; Oct/48
Whitehouse, G. D.—Louisiana State University Jan/50
Whitworth, C. A.—Bechtel Corp. Dec/42
Williams, A.—Ontario Hydro Nuclear Operations Nov/78
Winslow, Willis M.—Public Service Co. of Colorado Aug/33
Wood, Robert—The Dow Chemical Co. June/37

Z

Zaleiko, N. S.—Technicon Research Laboratories Apr/45
Zawadzki, S. J.—Public Service Co. of Colorado Mar/45

If you would like a copy of any article appearing in the Annual Index, send your request to the Editor, POWER ENGINEERING, 1301 South Grove Ave., Barrington, Illinois 60010